

REMARKS

This communication is submitted in response to the Office Action of May 21, 2004.

Claims 15-20 and 22-24 are pending in the subject application with claims 15, 16, 17, 23 and 24 being amended herewith. Claims 1-14 and 21 were previously canceled. Claims 18-20 and 22 have not been changed relative to their immediate prior version. Claim 22 stands allowed by the Examiner.

The amendments to the claims are clearly supported by the specification as originally filed and do not introduce any new matter. The amendments are submitted to place the subject application in condition for allowance, and the amendments do not raise any new issues or require further consideration or search.

Reconsideration of the subject application is respectfully requested in view of the foregoing amendments and the following remarks.

Claim 24 was objected to by the Examiner as being dependent upon a rejected base claim but was indicated as being allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claims. Since claim 24 has been amended to be rewritten in independent form to include all of the limitations of its base claim, claim 24 should now be allowable.

The rejection of claims 15-20 under 35 U.S.C. §102(b) as being unpatentable over Hirsch et al when taken with Vance, Jr., the rejection of claims 15-20 under 35 U.S.C. §103(a) as being unpatentable over Hirsch et al in view of Bodicky, the rejection of claim 23 under 35 U.S.C. §102(b) as being unpatentable over Hirsch et al when taken with Vance, Jr., and the rejection of claim 23 under 35 U.S.C. §103(a) as being

unpatentable over Hirsch et al in view of Bodicky and Vance, Jr. are all respectfully traversed for the following reasons.

The method of making a medical ventilation tube pursuant to the present invention involves forming a hollow tubular shaft from a first material having a rigidity to resist bending and forming a flange by molding a flanged end portion onto the hollow tubular shaft using a second material having a rigidity less than that of the first material. Forming the hollow tubular shaft involves forming the shaft to have an end with a circumferential end surface. Molding includes molding a tubular section of the flanged end portion to the shaft only at the end surface, such that the tubular section is in end to end abutment with the shaft at the end surface. In the resulting medical ventilation tube, the shaft and the tubular section of the flanged end portion cooperate to form a tube of uniform outer diameter, and no portion of the shaft is disposed within or encapsulated by the flanged end portion. This structure is achieved by placing the hollow tubular shaft in a cavity of a mold having an occupied portion completely filled by the entire shaft and an unoccupied portion having a configuration corresponding to the configuration of the flanged end portion and by supplying the second material to the unoccupied portion of the cavity. As explained below, these features are embodied in the claims and are not taught or suggested by the prior art cited and applied by the Examiner.

Independent claim 15 recites “forming a hollow tubular shaft from a first material having a rigidity to resist bending ..., said step of forming including forming the shaft to have an end with a circumferential end surface; and forming a flange by molding a flanged end portion onto the hollow tubular shaft using a second material having a

rigidity less than that of the first material ..., said step of molding including molding a tubular section of the flanged end portion to the shaft only at the end surface such that the tubular section is in end to end abutment with the shaft at the end surface ." As previously pointed out in the Amendment filed January 23, 2004, Hirsch et al discloses the flanges 27, 28 and 29 as having a higher durometer than the tubular section 36 and thusly fails to teach or suggest the step of forming recited in independent claim 15 requiring that the flanged end portion be formed of a second material having a rigidity less than the rigidity of the first material of which the tubular section 36 is formed. Connecting portions 30, 31 and 32 of Hirsch et al are interposed between each pair of next adjacent flanges 27, 28 and 29, and the Examiner refers to the connecting portions 30, 31 and 32 as having a durometer less than the durometer of the tubular section 36. However, it is noted that while Hirsch et al discloses that the flanges 27, 28 and 29 and the tubular section 36 may be attached to one another by insert molding, there are no teachings or suggestions whatsoever that the connecting portions 30, 31 and 32 are molded to the tubular section. Accordingly, claim 15 cannot be anticipated by Hirsch et al since Hirsch et al lacks any teaching of the recited steps of forming involving first and second materials.

The Examiner relies on Vance, Jr. as providing a description of "insert molding" applicable to Hirsch et al, and the Examiner's reliance on Vance, Jr. in combination with Hirsch et al makes the rejection under §102(b) improper. Moreover, the claimed invention is not taught or suggested by Hirsch et al considered in any reasonable combination with Vance, Jr. and/or Bodicky. The description of insert molding providing by Vance, Jr. is consistent with the explanation of insert molding submitted by

Applicants in the Amendment of January 23, 2004. As disclosed by Vance, Jr., insert molding involves injecting plastic into a cavity around an insert or preform placed into the same cavity such that the insert is encapsulated by the injected plastic. Insert molding thusly requires some form of encapsulation of an insert or preform within a molded part. In Hirsch et al, a portion of tubular section 36 is received or encapsulated within the retaining element 24 which comprises the flanges 27, 28 and 29. Another example of the encapsulation inherent to insert molding is represented in Bodicky. Bodicky discusses "insert molding operations" and in Bodicky, a hub 14 is molded over an end portion of a tube 12c with the result that the end portion of the tube is disposed within the molded hub. In contrast, the method of the present invention results in no part of the shaft being encapsulated within the flanged end portion. Rather, the tubular section of the flanged end portion is molded to the shaft only at an end surface of the shaft so that the tubular section is in end to end abutment with the end surface. In Hirsch et al, there are no teachings or suggestions whatsoever of the retaining element 24 which comprises the flanges 27, 28 and 29 being molded to the tubular section 36 only at a circumferential end surface of the tubular section 36 such that claim 15 cannot be anticipated by and/or considered obvious over Hirsch et al even when considered in view of Vance, Jr. and/or Bodicky. Bodicky does not rectify the deficiencies of Hirsch et al since, like Hirsch et al, Bodicky requires that the end of the preformed tube 12 be molded within the hub 14 so that the tube is embedded within the hub. Indeed, an essential feature of Bodicky is that the plastic material of the hub 14 flows over ribs 38 and 40 formed in the tube 12. Accordingly, independent claim 15 is clearly patentable over Hirsch et al considered singly or in view of Bodicky and Vance, Jr. and should be allowed along with dependent claims 16-20.

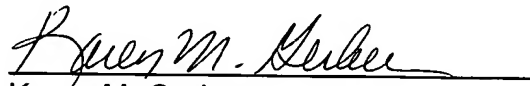
Independent claim 23 involves forming a hollow tubular shaft of the ventilation

tubē from a first material and forming a flanged end portion of the ventilation tube of a second material having a rigidity less than that of the first material, and these steps are not disclosed by Hirsch et al as explained above in connection with independent claim 15. Notably, the connecting portions 30, 31 and 32 are not disclosed by Hirsch et al as being molded to tubular section 36. Independent claim 23 further recites “placing the hollow tubular shaft in a cavity of a mold having an unoccupied portion completely filled by the entire shaft and an unoccupied portion having a configuration corresponding to the configuration of a flanged end portion of the ventilation tube; and forming the flanged end portion of the ventilation tube ... by supplying the second material to the unoccupied portion of the cavity to form the flanged end portion molded onto the hollow tubular shaft”. The structural arrangement disclosed by Hirsch et al wherein the tubular section 36 is received within the retaining element 24 comprising the flanges 27, 28 and 29 makes it impossible to form the device of Hirsch et al by the method steps recited in independent claim 23. It would be impossible for the tubular section 36 to be placed in a cavity of a mold having an occupied portion completely filled by the entire tubular section 36 and an unoccupied portion having a configuration corresponding to the configuration of retaining element 24 since such an arrangement would not result in the tubular section 36 being molded within the retaining element 24 as explicitly required by Hirsch et al. Accordingly, independent claim 23 cannot be anticipated by Hirsch et al even when considered in view of Vance, Jr., it being noted that Vance, Jr. merely confirms that insert molding as conventionally known requires that a preform or insert be encapsulated within a molded part. Bodicky fails to rectify any of the deficiencies of Hirsch et al since Bodicky also requires that the preformed tube 12 be encapsulated within the hub 14. It is submitted, therefore, that independent claim 23 is clearly patentable over Hirsch et al considered singly or in any reasonable combination with

Bodicky and Vance, Jr.

In light of the foregoing, all of the claims in the subject application are submitted to be in condition for allowance. Action in conformance therewith is courteously solicited. Should any issues in the subject application remain unresolved, the Examiner is encouraged to contact the undersigned attorney.

Respectfully submitted,



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